



Broadband network is envy of the west

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Macedonia usually only hits the headlines when ethnic tensions erupt. But this small land-locked nation now wants to project a more positive image as the world's first "wireless country".

In four years, Macedonia has vaulted from being known as one of the poorest countries in Europe to being one of the most technologically advanced.

Thanks to aid from foreign governments and commercial sponsors, Macedonia now has a computer laboratory in each of its 430 schools and a nationwide broadband network that many richer western countries will envy.

Rural schools which previously did not even have a telephone are today linked to the outside world via broadband wireless.

Macedonia claims to be the first country of its size to have a broadband wireless network covering 95 per cent of its population. The network, based on Motorola technology, uses WiFi hot-spots to bring high-speed internet access to schools and villages, while mesh technology is used to blanket urban areas.

The impetus for this project came from Boris Trajkovski, Macedonia's former president, who died in 2003. He was a strong believer in the need for Macedonian children to learn modern IT skills.

In 2002, during an official visit to China, he secured a grant to equip the country's schools with Chinese-made computers. Microsoft later donated more than 6,000 licences for software.

That in itself was a big leap forward. But Mr Trajkovski realised that without internet access, the children would remain at a disadvantage. He approached the US Agency for International Development (USAid) which has been funding projects in Macedonia for a decade.

USAid engaged the Academy for Economic Development (AED), a US non-profit organisation, to bring internet access to Macedonia's schools. But the project faced a big barrier, namely the prohibitive cost of internet access in Macedonia – more than €150 a month for a slow dial-up connection.

According to Glenn Strachan, who directed the Macedonia Connects project for AED, the blame lay with Macedonia's incumbent telecoms company, Maktel, which had the monopoly on the wired infrastructure and charged high prices.

Maktel's monopoly ended on December 31 2004 and AED quickly invited bids to provide a cheaper high-speed internet service not just for schools – which are subsidised by AED – but for non-school paying customers as well.

“We realised we needed a sustainable model that would help the ISPs get more commercial clients,” says Mr Strachan.

A local ISP, On.Net, won the contract with a proposal to bypass Maktel's infrastructure and blanket the country using wireless broadband. In August 2005, On.Net completed the wireless backbone and a month later it had connected all the schools.

The project has not been problem-free. China's donation only covered hardware so the PCs were originally installed with open source software. A year later, Microsoft's donation arrived and the teachers had to spend time installing and learning to use Microsoft software.

More worryingly, the installation of hardware in a dozen schools was delayed due to the activities of the Kosovo Liberation Army. War in the Serbian province of Kosovo officially ended in 1999, but ex-KLA insurgents still operate sporadically in northwestern Macedonia.

Mr Strachan knows that modern technology alone is not going to heal the deep wounds in Macedonia and other war-torn Balkan states. But he believes that bringing internet access to the nation's schools will improve education and, longer term, help modernise the economy.

Today, 300,000 children and students benefit from free internet access and USAid recently agreed to expand the project to bring 50 municipalities online in remote rural areas.

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